



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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March 11, 2003

Mr. William G. Conway Jr.
Forest River, Inc. - Odyssey Boat Division
51773 C.R. 39
Middlebury, Indiana 46540

Dear Mr. Conway:

Re: Exempt Construction and Operation Status,
039-16618-00576

The application from Forest River, Inc. - Odyssey Boat Division, received on December 30, 2002, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the aluminum boat manufacturing plant, to be located at 51773 C.R. 39, Middlebury, Indiana, is classified as exempt from air pollution permit requirements:

- (a) One (1) boat assembly booth, to be constructed in 2003, coating wooden sheet goods, utilizing HVLP airless spray, wipe cleaning, roll coating and extruding and coating a maximum of 48 boats per day;
- (b) One (1) woodworking area, with a maximum capacity of 75 lbs/hr of plywood, controlled by a dust collector and a cyclone;
- (c) One (1) welding area, using four (4) metal inert gas (MIG) stations, each rated at 1.7 pounds per hour; and
- (d) Three (3) natural gas space heaters, each rated at 1.8 million (MM) Btu per hour.

The following conditions shall be applicable:

- (1) Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:
 - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
- (2) Pursuant to 326 IAC 6-3-2(e)(2) (Manufacturing Processes), allowable particulate emissions from the woodworking process shall not exceed 0.551 pounds per hour. The use of a dust collector and a cyclone with this process ensures compliance with this limit.
- (3) Any change or modification which may increase actual emissions from the boat assembly booth to greater than fifteen (15) pounds of VOC per day shall require prior approval from IDEM, OAQ prior to making the change.

The source is considered a new source because the above listed emission units are being moved from an existing permitted source to a totally new location.

The above listed emission units were originally permitted in R039-10855-00491, issued June 8, 1999, to operate at Elkhart, Indiana 46516. They are now relocating to a new location at 51773 C.R. 39, Middlebury, Indiana 46540. Therefore, the source is required to obtain a new permit for the new location. Also, a new plant identification number was assigned to this source.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Original signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

AB/EVP

cc: File - Elkhart County
Elkhart County Health Department
Air Compliance - Greg Wingstrom
Permit Tracking
Air Programs Section- Michelle Boner

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Background and Description

Source Name: Forest River, Inc. - Odyssey Boat Division
Source Location: 51773 C.R. 39, Middlebury, Indiana 46540
County: Elkhart
SIC Code: 3732
Exemption No.: 039-16618-00576
Permit Reviewer: Alic Bent/EVP

The Office of Air Quality (OAQ) has reviewed an application from Forest River, Inc. relating to the operation of an aluminum boat manufacturing plant.

Permitted Emission Units and Pollution Control Equipment

There are no permitted facilities operating at this source during this review process.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

New Emission Units and Pollution Control Equipment Receiving Advanced Source Modification Approval

The application includes information relating to the prior approval for the construction and operation of the following equipment pursuant to 326 IAC 2-8-4(11):

- (a) One (1) boat assembly booth, to be constructed in 2003, coating wooden sheet goods, utilizing HVLP airless spray, wipe cleaning, roll coating and extruding and coating a maximum of 48 boats per day;
- (b) One (1) woodworking area, with a maximum capacity of 75 lbs/hr of plywood, controlled by a dust collector and a cyclone;
- (c) One (1) welding area, using four (4) metal inert gas (MIG) stations, each rated at 1.7 pounds per hour; and
- (d) Three (3) natural gas space heaters, each rated at 1.8 million (MM) Btu per hour.

Existing Approvals

The source is considered a new source because the above listed emission units are being moved from an existing permitted source to a totally new location.

The above listed emission units were originally permitted in R039-10855-00491, issued June 8, 1999, to operate at Elkhart, Indiana 46516. They are now relocating to a new location at 51773 C.R. 39, Middlebury, Indiana 46540. Therefore, the source is required to obtain a new permit for the new location. Also, a new plant identification number was assigned to this source.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the aluminum boat manufacturing plant be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on December 30, 2002.

Emission Calculations

See Appendix A: pages 1 through 6 of this document for detailed emissions calculations.

Potential To Emit of Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	3.83
PM-10	1.01
SO ₂	0.01
VOC	8.70
CO	1.99
NO _x	2.37

HAP's	Unrestricted Potential Emissions (tons/yr)
Chromium	less than 10
Manganese	less than 10
Nickel	less than 10
Ethylbenzene	less than 10
MEK	less than 10
Toluene	less than 10
Xylene	less than 10
TOTAL	less than 25

- (a) The potential to emit of all the regulated pollutants for this modification at the source is lower than the registration applicability thresholds stated in 326 IAC 2-7-10.5(d)(4). Therefore, pursuant to 326 IAC 2-1.1-3(d)(3), this is an exempt unit.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM-10	attainment
SO ₂	attainment
NO ₂	attainment
Ozone	maintenance
CO	attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) The National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Wood Furniture Manufacturing Operations (40 CFR 63, Subpart JJ) are not applicable because this is not a major source as defined in 40 CFR 63, Subpart A and the source does not engage in the manufacturing of wood furniture or wood furniture components.
- (c) The National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Boat Manufacturing Operations (40 CFR 63, Subpart VVVV) applies to boat manufacturing facilities that builds fiberglass boats or aluminum recreational boats and are a major source of HAP. This source manufactures aluminum recreational boats but is not a major source of HAP, therefore, Subpart VVVV does not apply.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is located in Elkhart County which is one of the specifically regulated counties, but the potential to emit VOC and NO_x is less than ten (10) tons per year. Therefore, 326 IAC 2-6 does not apply.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of this source will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

- (a) The woodworking operation handles less than 100 pounds of material per hour. Pursuant to 326 IAC 6-3-2(e)(2), allowable particulate emissions from this process shall not exceed 0.551 pounds per hour. The use of a dust collector and a cyclone with this process ensures compliance with this limit.
- (b) Pursuant to 326 IAC 6-3-1(b)(9), the welding operation is exempt from 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) because less than 625 pounds of wire is consumed per day.

326 IAC 8-1-6 (New Facilities, General Reduction Requirements)

The one (1) boat assembly booth is not subject to this rule because the total potential to emit VOC is less than 25 tons per year.

326 IAC 8-2-9 (Miscellaneous Metal Coating Operation)

This source is not subject to the provision of 326 IAC 8-2-9 (Miscellaneous Metal Coating Operation) because the parts coated are wooden sheet goods, not metals.

326 IAC 8-2-10 (Flat Wood Panels)

The one (1) boat assembly booth is not subject to 326 IAC 8-2-10 (d)(3) (Flat Wood Panels). However, any change or modification which may increase actual emissions from the boat assembly booth to greater than fifteen (15) pounds of VOC per day shall require prior approval from IDEM, OAQ prior to making the change.

326 IAC 8-2-12 (Wood Furniture and Cabinet Coating)

This facility is not subject to 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating), because the boat assembly booth does not surface coat wood furnishings which includes cabinets, tables, chairs, sofas, art objects, and any other coated furnishing made of solid wood, wood composition or simulated wood material.

Testing Requirements

Testing is not required for this source.

Compliance Monitoring Requirements

Compliance Monitoring is not required since the allowable emissions for the woodworking operation is less than ten (10) pounds per hour.

Conclusion

The operation of this aluminum boat manufacturing plant shall be subject to the conditions of the attached proposed Exemption No. 039-16618-00576.

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Page 1 of 6 TSD App A

Company Name: Forest River, Inc. - Odyssey Boat Division
Address City IN Zip: 51773 C.R. 39, Middlebury, IN 46540
Pit ID: 039-16618-00576
Reviewer: Alic Bent/EVP
Date: January 10, 2003

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Alpha 8011 Adhesive	8.4	42.00%	41.7%	0.3%	41.7%	58.00%	1.25000	2.000	0.04	0.03	0.06	1.50	0.27	0.00	0.04	100%
Spray N Go Paint	6.3	86.40%	24.7%	61.7%	0.0%	14.60%	0.00380	2.000	3.86	3.86	0.03	0.70	0.13	0.01	26.41	75%
Alex Plus	14.1	25.00%	24.0%	1.0%	15.0%	75.00%	0.11720	2.000	0.17	0.14	0.03	0.80	0.15	0.00	0.19	100%
Rust Stop Enamel	10.5	28.80%	0.0%	28.8%	0.0%	71.20%	0.01560	2.000	3.02	3.02	0.09	2.26	0.41	0.00	7.61	100%
Terp-A-Klean	7.2	100.00%	5.0%	95.0%	5.0%	0.00%	0.08900	2.000	7.16	6.80	1.21	29.06	5.30	0.00	59.59	0%
WD40	6.7	63.00%	0.0%	63.0%	0.0%	37.00%	0.06250	2.000	4.20	4.20	0.53	12.61	2.30	0.34	11.36	75%

Potential Emissions	Add worst case coating to all solvents	1.96	46.92	8.56	0.34
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METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

Appendix A: Emission Calculations
HAP Emission Calculations

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Company Name: Forest River, Inc. - Odyssey Boat Division
Address City IN Zip: 51773 C.R. 39, Middlebury, IN 46540
Permit #: 039-16618-00576
Permit Reviewer: Alic Bent/EVP
Date: January 10, 2003

Material	Density (Lb/Gal)	Gallons of Material (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % MEK	Weight % Ethylbenzene	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	MEK Emissions (ton/yr)	Ethylbenzene Emissions (ton/yr)
Alpha 8011 Adhesive	8.4	1.25000	2.000	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00
Spray N Go Paint	6.3	0.00380	2.000	5.00%	32.00%	10.00%	5.00%	0.01	0.07	0.02	0.01
Alex Plus Caulk	14.1	0.11720	2.000	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00
Rust Stop Enamel	10.5	0.01560	2.000	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00
Terp-A-Klean	7.2	0.08900	2.000	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00
WD40	6.7	0.06250	2.000	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00

Total Potential Emissions

0.01

0.07

0.02

0.01

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Appendix A: Welding

Page 3 of 6 TSD App A

Company Name: Forest River, Inc. - Odyssey Boat Division
Address City IN Zip: 51773 C.R. 39, Middlebury, IN 46540
Permit No./Plt ID: 039-16618-00576
Reviewer: Alic Bent/EVP
Date: January 9, 2003

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS * (lb pollutant / lb electrode)				EMISSIONS (lb/hr)				TOTAL HAPS (lb/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
WELDING												
Metal Inert Gas (MIG)(ER70S)	4	1.7		0.0052	0.00346	0.00104	0.00001	0.035	0.023528	0.007	0.000068	0.031
EMISSION TOTALS								PM = PM10	Mn	Ni	Cr	Total HAPs
Potential Emissions lbs/hr								0.04	0.02	0.00	0.00	0.03
Potential Emissions lbs/day								0.85	0.56	0.00	0.00	0.74
Potential Emissions tons/year								0.15	0.103	0.000	0.00	0.13

METHODOLOGY

*Emission Factors are from AP-42, Chapter 12, Fifth Edition

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/day x 1 ton/2,000 lbs.

Welding and other flame cutting emission factors are from an internal training session document.

Appendix A: Process Particulate Emissions

Company Name: Forest River, Inc. - Odyssey Boat Division
Address City IN Zip: 51773 C.R. 39, Middlebury, IN 46540
Permit #: 039-16618-00576
Reviewer: Alic Bent/EVP
Date: January 10, 2003

Particulate Emissions Before Control (tons/year)						
Process	Raw Material Fed (lb/hr)	Particulate Generated (lb/hr)	% PM	% PM-10	PM emissions (tons/yr)	PM-10 emissions (tons/yr)
Woodworking	75	7.50	10	1	3.29	0.33

Particulate Emissions After Control (tons/year)							
Process	Raw Material Fed (lb/hr)	Particulate Generated (lb/hr)	% PM	% PM-10	PM emissions (tons/yr)	PM-10 emissions (tons/yr)	Control Efficiency
Woodworking	75	7.50	10	1	0.07	0.01	98.00%

Methodology:Uncontrolled Emissions:

Uncontrolled Emissions (tons/yr) = Particulate Generated (lb/hr) * PM % * 8760 hr/yr * 1 ton/2,000 lbs

Controlled Emissions:

Controlled Emissions (tons/yr) = Particulate Generated (lb/hr) * PM % * 8760 hr/yr * 1 ton/2,000 lbs * 1/(1-Control Efficiency)

Appendix A: Emissions Calculations

Natural Gas Combustion Only

MM BTU/HR <100

Small Industrial Boiler

Company Name: Forest River, Inc. - Odyssey Boat Division
Address City IN Zip: 51773 C.R. 39, Middlebury, IN 46540
Permit#: 039-16618-00576
Reviewer: Alic Bent/EVP
Date: January 10, 2003

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

5.4

47.3

Pollutant						
Emission Factor in lb/MMCF	PM* 1.9	PM10* 7.6	SO2 0.6	NOx 100.0	VOC 5.5	CO 84.0
Potential Emission in tons/yr	0.04	0.18	0.01	2.37	0.13	1.99

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

See page 2 for HAPs emissions calculations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only**

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MM BTU/HR <100

Small Industrial Boiler

HAPs Emissions

Company Name: Forest River, Inc. - Odyssey Boat Division

Address City IN Zip: 51773 C.R. 39, Middlebury, IN 46540

Permit #: 039-16618-00576

Reviewer: Alic Bent/EVP

Date: January 10, 2003

HAPs - Organics

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	4.967E-05	2.838E-05	1.774E-03	4.257E-02	8.042E-05

HAPs - Metals

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	1.183E-05	2.602E-05	3.311E-05	8.988E-06	4.967E-05

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.